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An example of health training for pregnant women

Przykładowy trening prozdrowotny dla kobiety w ciąży

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Summary

With the expansion of the knowledge about the physiology of pregnancy is changing the recommendation for safe management during its duration. More and more often talk about the need for physical activity due to maintaining or even increasing cardiopulmonary capacity, muscle strength, range of joint mobility, especially the hip and spine. And the right conduct and selection of exercises not only guarantees the development of the child, but also prepares the future mother for active participation in childbirth. Regular gymnastics and properly selected exercises, as part of pregnancy care with a physiological, uncomplicated course, are widely recognized. It is important that such awareness also have women expecting a child, while gaining additional motivation to exercise. In this article, we have tried to present and justify the valuable effect of the mentioned gymnastic exercises, which a pregnant woman can do without medical contraindications.

Key words: pregnancy, physical activity, woman, childbirth

Streszczenie

Wraz z poszerzaniem się wiedzy na temat fizjologii ciąży zmieniają się zalecenie dotyczące bezpiecznego postępowania w czasie jej trwania. Coraz częściej mówi się o konieczności podejmowania aktywności fizycznej z powodu utrzymania lub nawet zwiększenia wydolności krążeniowo-oddechowej, siły mięśni, zakresu ruchomości stawów szczególnie biodrowych i kręgosłupa. A właściwe postępowanie i dobór ćwiczeń gwarantuje nie tylko rozwój dziecka, ale także przygotowanie przyszłą mamę do aktywnego udziału w porodzie. Regularna gimnastyka oraz odpowiednio dobrane ćwiczenia, jako części pielęgnacji ciąży o fizjologicznym, niepowikłanym przebiegu są powszechnie uznawane. Ważne jest, aby taką świadomość posiadały również kobiety oczekujące dziecka, jednocześnie zyskując dodatkową motywację do ćwiczeń. W artykule tym staraliśmy się przedstawić i uzasadnić wartościowe działanie przytoczonych w parcy ćwiczeń gimnastycznych, które kobieta w ciąży bez przeciwwskazań lekarskich mogą wykonać.

Słowa kluczowe: ciąża, aktywność fizyczna, kobieta, poród

Introduction

The subject of physical activity in pregnancy is an increasingly common phenomenon. The awareness of the need for appropriate movement in a time that is exceptional for a woman is greater than it was even several years ago. There is more and more talk about the need for physical activity due to maintaining or even increasing cardiopulmonary capacity, muscle strength, range of joint mobility, especially the hip and spine. These elements may not only have the effect of shortening the time of delivery or improving its effectiveness, but also may alleviate pregnancy ailments [1]. The expectant mother is more eager to reach for the sources, where she can find news about the movement she can make. Wanting to be in good vitality, as well as the desire to maintain body aesthetics, despite changes in the body. The body in current culture is an important element of the value system, affecting self-confidence. However, it should be emphasized that the most important priority for a pregnant woman is her child's health. That is why women usually look for alternative solutions in this situation. Physical activity during pregnancy is not only a corporeal approach, but above all a positive effect on physiological changes occurring at that time. In addition, according to scientific reports, proper dosage of physical activity gives positive effects during pregnancy or childbirth but also accelerates the process of regression of pregnancy changes in the puerperium [2-4].

The physiological pregnancy lasts 40 weeks and this period is divided into 3 trimesters. Each of them is characterized by specific changes designed to adapt a woman's body to accept a child. There are numerous anatomical, physiological and biochemical changes in the pregnant woman's body and if the pregnancy is going well, they do not affect the general condition of the pregnant woman and her health. During pregnancy, the demand for oxygen increases, which is why in the first trimester the respiratory and minute lung capacity increases. Energy metabolism is also subject to changes in pregnancy. Characteristic for pregnancy is the so-called relative anemia caused by the fact that during this time the plasma volume increases faster than the amount of red blood cells it contains and reaches its peak in 32 weeks of pregnancy. There may be moderate dyspnoea exertional, obstruction of the Pharyngotympanic

tube well as changes in tone and coloration of the voice due to swelling of the mucous membranes of the airways. Therefore, greater physical exertion that triggers a feeling of breathlessness should be avoided [5,6].

In this article, we tried to present and justify the valuable effects of the exercises quoted which pregnant women can do without medical contraindications. The use of gymnastic and breathing exercises as well as loosening techniques by a pregnant woman can bring many benefits for both the child and the mother [7,8]. For the mother, the duration of labor is shortened, uterine contractions are less likely to be affected. In women with physical activity, the number of premature deliveries and after delivery is reduced, the need for episiotomy is less frequent, the number of cervical lesions during delivery is less, and recovery time is shorter after delivery [9,10,11]. Perinatal injuries are less common in women showing physical activity during pregnancy, and the child's general condition after birth is also better [10,12]. However, it is important to properly dose physical activity, because only then can it bring the desired results. Due to the different state of a pregnant woman, physical activity directed at improving performance parameters will be milder than amateur gymnastics. And their goal will be to prepare the pregnant woman for childbirth. These exercises should take the form of kinesi-stimulation including exercises focused on working with individual muscle parts, general conduction, breathing exercises and relaxation techniques. Before starting exercise, always consult your pregnancy physician first of all if there are any contraindications to using gymnastics. If there are no contraindications and we undertake to introduce gymnastic exercises, we must remember that in order for them to be safe, they must be performed systematically, correctly and with the right choice of load. And the type of intensity of effort is an individual matter and depends on many factors, e.g. the degree of physical activity before pregnancy, the stage of pregnancy.

When conducting pregnancy exercises, several important rules should be borne in mind to ensure the safety and comfort of the exerciser. Remember to hydrate the body, appropriate airy clothing and not too high humidity in the place of exercise. Exercise should be carried out in such a way that the woman's body does not overheat, which could have a negative effect on the health and development of the fetus. A woman should consume more calories to have enough energy for exercise, and above all to ensure the energy security of the child. The frequency of heart contractions in a pregnant woman exercising should not exceed 120 thighs / min, eliminate exercises for the rectus abdominal muscle. First of all, watch how the pregnant woman responds to the exercises.

During exercise, you should also remember to pay attention to the curvature of the spine – progress in pregnancy. Therefore, we do not use exercises to deepen thoracic kyphosis, as well as exercises standing for a long time. Breathing during exercise is important - should not increase intra-abdominal pressure and blood [13,14].

An example of health training of a pregnant woman in the form of a personal consultation.

First of all, before starting personal training with a pregnant woman, should conduct a medical interview with her. This is a very important element of work, enabling you to receive the necessary information to create and implement a personalized training plan. Below is the author's interview with a pregnant woman and sample answers:

Name: (Alice)

Age: (28 years old)

Number of deliveries: (0)

Single or multiple pregnancy? (Single)

Have there been miscarriages? (no)

Date of delivery: (20/08/2019, assuming that today 6/04/2019 the woman is in the second trimester of pregnancy)

Are there any troublesome problems due to pregnancy, if so what? (NO)

Are there any medical contraindications for performing any exercises? (NO)

How did weight gain during pregnancy? (10kg)

Diet: (I try to eat healthy food in accordance with dietary guidelines for pregnant women)

Physical activity before pregnancy: (cycling, hiking)

Hobbies: (film and recreation)

What goals do you want to achieve? (prepare for childbirth and being active during pregnancy)

Perform a rectus abdominal muscle stretch test: (~ 0.5 cm).

Sample answers written above in the interview become the foundation on which the creation of the entire training is based.

Pregnant woman training

Warm-up:

- Treadmill walking (speed: 5 km / h; slope: 0%) 6 minutes
- Exercises in place:

In attitude:

- arm circulation forward and backward (20 reps x 2),
- side slopes of the torso (10 reps per page),

In a supported knee:

- lift the side of the arm up, the head follows the hand (chest opening exercise) (10 reps per page),
- extend your legs in the knee joint by moving your foot on the ground (10 reps per leg).

Main part:

The proposed exercises are possible to perform in a peripheral form. For a pregnant woman who, for example, completed a given interview, one may propose the implementation of two circuits with a two-minute break. (Remembering to monitor the pregnant woman's response to exercise. If you have any worrying symptoms, stop training.)

Exercises in posture (exercise gum):

- The ends of the exercise gum are held in the hands, the exercise gum runs under the feet set to the width of the hips.

Movement: Abduction the lower limb (10 reps per limb).

- Holding the gum in front of you in height and width of the shoulders.



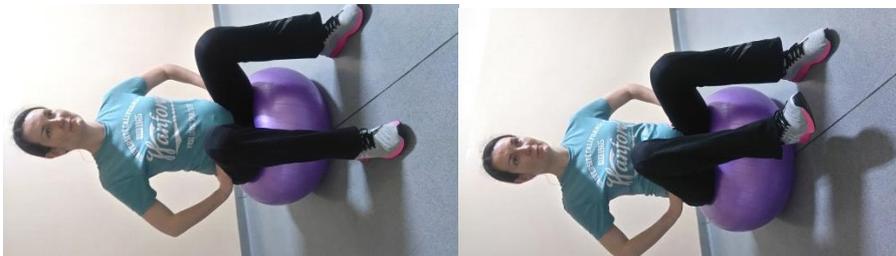
Movement: stretching the gum by horizontal abduction (10 reps)

Exercises in sitting on a rehabilitation ball:

- Sit on the ball, hands on the hips:

Movement: hip circulation (8 reps per circulation direction).

as above



Movement: □ alternately lift lower limb, flexion at the knee joint (20 reps)

- Sit on the ball, in the hands of a dumbbell weighing 1.5 kg each, lowered along the body

Movement: upper limb flexion at the elbows (10 reps)

- As above

Movement: shoulder lift sideways to shoulder height (10 reps)

Final part:

Stretching with relaxing music, which was chosen by a pregnant woman before training.

- Extended kneeling seat



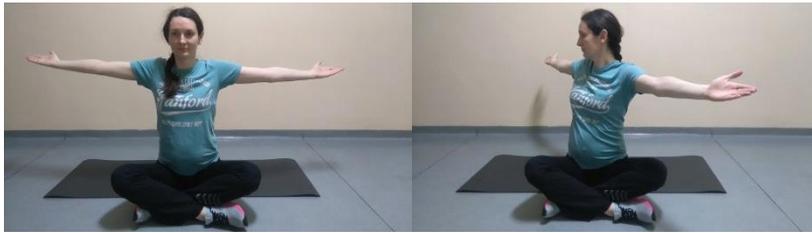
Making a Japanese slope, i.e. falling forward with your arms forward.

- Lying sideways

Pulling the lower leg to the buttock and holding it with your hand.

Pulling the lower leg to the torso, slightly dislocate and rotate the lower limb inside the hip joint.

- Cross-legged, arms to the side



Rotate the torso to one side and hold in this position for a few seconds breathing calmly, repeat to the other side.

One shoulder up and slope sideways opposite to the shoulder - hold for a few seconds and repeat to the other side.

Slowly, the pregnant woman gets up and performs breathing exercises to relax and calm down at the end of the workout.

Physical activity of pregnant women stimulates the work of the whole body and brings many benefits for the mother and the baby, increases adaptability and promotes mental and emotional balance, optimizes the delivery and delivery, prevents complications. However, when taking up physical activity in pregnancy, it is necessary to exclude sport co-leadership and keep in mind that the goal is to maintain fitness and achieve maximum results. Also, do not take intensive exercises yourself if the woman was not physically active before pregnancy. When exercising, remember to avoid overheating, especially in the first trimester where the thermoregulation mechanism between mother and fetus is not regulated. It is important to remember about proper hydration, which can also reduce the risk of hyperthermia, and the right amount of calories. Depending on physical exertion, it should be increased, and the last small meal should be eaten about 1 hour before exercise.

Bibliography:

- 1 Kozłowska J: Ćwiczenia fizyczne kobiet w ciąży. Aktualne (2006 r.) stanowisko Royal College of Obstetricians and Gynaecologists. *Med Prakt Gin Poł* 2007; 5: 13-18.
- 2 Kozłowska J, Curyło M: Skutki przygotowania kobiet do porodu i położu według zasad psychoprofilaktyki porodowej. *Now Lek* 2005; 2(74):159-162.
- 3 Wójtowicz K, Krekora M, Krekora K et al.: Wpływ aktywności fizycznej ciężarnych na przebieg porodu. *Kwart Ortop* 2011; 2: 188-196
- 4 Rycyk M, Marczewski K: Zamojskie Studia i Materiały. Seria Fizjoterapia. 2012; 14; 1 (35): 56-62.
- 5 Chrzan B. Rozpoznanie ciąży i ustalenie terminu porodu.[w:] *Położnictwo i ginekologia*. Bręborowicz G (red.) PZWL, Warszawa 2005
- 6 Pisarski T. *Położnictwo i ginekologia*. PZWL, Warszawa 2003
- 7 Ratcliffe SD, Baxley EG, Cline MK, Sakornbut EL: *Family Medicine Obstetrics*. Mosby Elsevier, Philadelphia 2008: 99.
- 8 Milanowska K: *Kinezyterapia*. Wydawnictwo Lekarskie PZWL, Warszawa 2003: 17.
- 9 Szukiewicz D: *Fizjoterapia w ginekologii i położnictwie*. Wydawnictwo Lekarskie PZWL, Warszawa 2012: 174.
- 10 Opala-Berdzik A, Bacik B, Kurkowska M: Zmiany biomechaniczne u kobiet w ciąży. *Fizjoterapia* 2009; 17(3): 51-55. 20

- 11 Boguszewski D, Sałata D, Adamczyk J, Białoszewski D. Ocena skuteczność ćwiczeń relaksacyjnych i stabilizacyjnych w minimalizacji bólu lędźwiowo - krzyżowego odcinka kręgosłupa u kobiet ciężarnych. *Przegl Med Uniw Rzeszowskiego i Narodowego Instytutu Leków w Warszawie* 2014;2:152-161.
- 12 Sass A., Mączka M. Physical activity of pregnant women in the light of scientific research – a review of the literature. *Journal of Education, Health and Sport*. 2017;7(8):550-565
- 13 Chitryniewicz-Rostek J., Kulis A., Kreska-Korus A., Wpływ aktywności fizycznej na stan psychofizyczny kobiet w ciąży, „Rehabilitacja Medyczna” 2015, nr 19, s. 9–14.
- 14 Worska A., Szumilewicz A., Aktywność fizyczna kobiet w ciąży w świadomości przyszłych instruktorów rekreacji ruchowej, „Journal of Education, Health and Sport” 2015, nr 5, s. 91–102.

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